

CHILDHOOD
LEAD POISONING
IN RHODE ISLAND:
THE NUMBERS
2005 EDITION

RHODE ISLAND DEPARTMENT OF HEALTH





Dear Colleague:

Preventing childhood lead poisoning is one of our best examples of “doing public health better” in Rhode Island. For many years, the Rhode Island Department of Health has worked with community partners to clean up environments where children are exposed to lead. We regularly screen children for lead poisoning and provide those with elevated blood lead levels timely case management services and medical treatment when necessary. All of our efforts have resulted in a dramatic decrease in the number of lead poisoned children over time. However, nearly 100 children continue to be lead poisoned every month.

In recent years, we shifted our focus to include primary prevention – eliminating exposure to environmental lead and protecting children from lead poisoning. We need to accomplish this without decreasing the availability of lead safe, affordable housing – especially for pregnant women and young children. The elimination of lead poisoning can be achieved, but it will require serious commitments by all to improve housing conditions throughout the state.

We hope that this publication, containing data on the incidence, prevalence, geographical concentration of elevated blood lead levels among Rhode Island children, and environmental inspections serves as a useful tool to help inform policy and engage decision makers in prioritizing the need for safe, affordable housing in every community. Please continue to work with us to make Rhode Island a safer place for every child and family.

Sincerely,

A handwritten signature in blue ink, appearing to read "David R. Gifford".

David R. Gifford, MD, MPH

Director, Rhode Island Department of Health



CHILDHOOD LEAD POISONING IN RHODE ISLAND: THE NUMBERS 2005 EDITION

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ELIMINATING CHILDHOOD LEAD POISONING BY 2010

The Centers for Disease Control and Prevention (CDC) requires all state and local Childhood Lead Poisoning Prevention Programs, including the Rhode Island Program, to develop a strategic plan to eliminate childhood lead poisoning by 2010. As part of that plan, CDC encourages each state to develop a state-specific definition for elimination of lead poisoning based on local data. The elimination goal in Rhode Island is:

*“To decrease the proportion of new cases [incidence] of lead poisoning (defined as a blood lead level of 10µg/dL or more) in children under six years of age to less than 5% in all Rhode Island communities **without decreasing the availability of lead safe, affordable housing**”*

The strategy for elimination is two-fold. Reduce incidence and ensure the availability of lead safe, affordable housing. Despite the fact that incidence is decreasing throughout the state, we will not reach elimination without addressing the housing component.

In July 2004, the Rhode Island Childhood Lead Poisoning Prevention Program (RI CLPPP) created a Plan to achieve this goal (“Rhode Island’s Plan to Eliminate Childhood Lead Poisoning by 2010” www.health.ri.gov/lead/databook). The Plan has three main objectives:

1. To support the implementation of the Lead Hazard Mitigation Law
2. To formulate innovative primary prevention strategies to achieve elimination
3. To maintain and re-evaluate secondary prevention efforts

The Plan describes how progress on each objective can be measured using data in the RI CLPPP database, and, in some cases, data available to the Program from other state and local agencies. The Plan calls for an evaluation of the elimination goal using both of the following components together:

- 1. Incidence:** The incidence of childhood lead poisoning is estimated for each city and town and calculated by dividing the number of new cases of lead poisoning (children with a blood lead level $\geq 10\mu\text{g/dL}$ for the first time in their lives), by the total number of children screened, who have never had a blood lead level $\geq 10\mu\text{g/dL}$.
- 2. Lead safe, affordable housing:** This measure is still being developed. Measuring the availability of lead safe, affordable housing is a challenge, both with respect to identifying lead safe units and determining how many are affordable. In the last few months, RI CLPPP has been working to develop a feasible way to assess the availability of lead safe, affordable housing. Efforts include:
 - a) Forming a RI CLPPP Advisory Committee workgroup to help develop a housing measure. The workgroup will contact the numerous local and state agencies that possess housing data and report back on the availability of these data and the formatting barriers that limit their utility.

- b) Using the report and logic model developed by two students from the Harvard School of Public Health to design a measure to track the availability of lead safe, affordable housing.
- c) Establishing stronger relationships with housing agencies, including the local Lead Hazard Reduction Programs, the Weatherization Program, the Housing Resources Commission, Rhode Island Housing, and the U.S. Environmental Protection Agency (EPA).
- d) Promoting the use of RI CLPPP's public data among lead poisoning prevention advocates. These data include public lists of properties, such as High Risk Premises, Properties with Multiple Poisonings, and Ongoing Violations, and are published on RI CLPPP's web site as required by the Lead Hazard Mitigation Law. These public lists can be found on the web at www.health.ri.gov/lead.

As early as May 2005, RI CLPPP will publish a report on the state's progress towards eliminating lead poisoning. This report will include an assessment of progress made on each of the objectives described in Rhode Island's Plan to Eliminate Childhood Lead Poisoning and a description of RI CLPPP's efforts to develop an appropriate housing measure. The progress report will be shared with members of the Advisory Committee and then posted on the website and submitted to the Centers for Disease Control and Prevention.



2004 HIGHLIGHTS

Change in Lead Screening Guidelines

During the summer of 2004, the Rhode Island Childhood Lead Poisoning Prevention Program (RI CLPPP) made two changes to its Lead Screening and Referral Guidelines.

The first change involved follow-up screening. In the past, if a child under age six had a capillary blood lead level $\geq 20\mu\text{g/dL}$, RI CLPPP contacted the physician (via a phone call, a letter, or both) to encourage him to conduct a confirmatory venous test on the child. Starting July 1, 2004, the blood lead level requiring this type of follow-up with the physician was reduced from $\geq 20\mu\text{g/dL}$ to $\geq 10\mu\text{g/dL}$. These additional steps to support pediatricians were implemented in an effort to increase the rate of confirmatory venous testing throughout the state.

The second change involved referrals to case management. Prior to July 1, 2004, children under age six with a first time blood lead level, capillary or venous, between 15 and 19 $\mu\text{g/dL}$, were referred to case management. According to the changes that were implemented on July 1, 2004, children with a first time blood lead level between 15 and 19 $\mu\text{g/dL}$ are now referred to case management only if their blood lead level is based on a venous test. This change arose from the fact that many families in Rhode Island already

desire and request a venous confirmation before accepting services from the lead centers.

The current guidelines can be found on the web at www.health.ri.gov/lead/databook.

Completion of Core City Reports

The past ten years of data show that the incidence of childhood lead poisoning in Rhode Island has been concentrated in the six core cities. Core cities are those with a childhood poverty rate greater than 15% according to the 2000 Census. These cities include Central Falls, Newport, Pawtucket, Providence, West Warwick, and Woonsocket. In an effort to monitor the rates of lead poisoning in these cities over time, the



RI CLPPP completed summary reports for each of the six core cities in December 2004. Each report contains city-specific lead poisoning information, including screening information, incidence rates, prevalence rates, and environmental inspection data. Copies of these reports were sent to the mayors of each of the core cities so that policy makers and city officials can use the data to better understand the lead poisoning problem at the local level. These reports are also available on the web at www.health.ri.gov/lead/databook.

Preparation for the Implementation of the Lead Hazard Mitigation Law

Many agencies and individuals collaborated throughout 2004 to ensure that Rhode Island is prepared for the implementation of the Lead Hazard Mitigation Law on July 1, 2005. These coordinated efforts have resulted in the preparation and education of many Rhode Island property owners. Over 6,000 property owners attended the required three-hour Lead Hazard Awareness Class in 2004. These property owners have taken an active role in the implementation process of the Law, making critical maintenance improvements on their properties that will ensure the safety of tenants. Other highlights include:

- » 45,000 informational materials on the Lead Hazard Mitigation Law have been distributed to property owners and tenants;
- » Over 3,300 individuals have been assisted through the Housing Resources Commission's toll-free hotline;
- » At the close of 2004 there were 182 licensed professionals prepared to conduct 163,000 clearance inspections during the 2005 calendar year;
- » All of the public lists of properties (High Risk Premises, Properties with Multiple Poisonings, and Ongoing Violations) required by the Law are posted on the Department of Health's website and can be found at www.health.ri.gov/lead;
- » From May through July and November through December 2004, a media campaign, including newspaper, television, and radio ads, was implemented to educate the public about the Lead Hazard Mitigation Law.

UNDERSTANDING THE LEAD DATA

In Rhode Island, health care providers are required by law to screen their patients between nine months and six years of age for lead poisoning annually. The screening process involves collecting a sample of blood from the child, either from a capillary (fingerstick) or a vein (venous test), and analyzing the blood to determine the amount of lead in the sample. Blood lead levels (BLL) are measured and reported as micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$ or mcg/dL).

Although the guidelines recommend that children begin to be screened at nine months of age, some children may be screened earlier if they are at high risk for lead poisoning. The data presented in this report are based on the results of all blood lead tests, both capillary and venous, performed on children from birth to six years of age in the state of Rhode Island.¹ For the incidence and prevalence analyses, each child is represented once per year in which he was screened.

For surveillance purposes in Rhode Island, any child under the age of six with a blood lead level $\geq 10\mu\text{g}/\text{dL}$ is considered lead poisoned. As the Centers for Disease Control and

Prevention (CDC) states, it is not possible to select a single number to define lead poisoning for various intervention activities. According to guidelines from the CDC, community prevention activities, such as nutritional and educational campaigns, should be implemented at blood lead levels $\geq 10 \mu\text{g}/\text{dL}$, and individual prevention activities, such as case management and environmental investigations, should be implemented at blood lead levels $\geq 15 \mu\text{g}/\text{dL}$.²



1 Given that calculations in this document are based on screening data rather than population data for all children under the age of six, the numbers presented here are estimates.

2 Preventing Lead Poisoning in Young Children: A Statement by the Centers for Disease Control- October 1991. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Atlanta, GA 30333.

Cases of lead poisoning in Rhode Island are broken down into the following action levels:

ACTION LEVEL	BLOOD LEAD LEVEL (BLL)	ACTION
ELEVATED BLOOD LEAD (EBL)	ONE BLL BETWEEN 10-14 µg/dL	CAPILLARY: LETTER SENT TO PRIMARY CARE PROVIDER RECOMMENDING VENOUS TEST TO CONFIRM THE BLL* VENOUS: LETTER SENT TO FAMILY INVITING THEM TO REQUEST A HOME VISIT THROUGH THE FAMILY OUTREACH PROGRAM*
PREVENTIVE	ONE BLL BETWEEN 15-19 µg/dL	CAPILLARY: LETTER SENT TO PRIMARY CARE PROVIDER RECOMMENDING VENOUS TEST TO CONFIRM THE BLL VENOUS: FAMILY IS REFERRED TO A LEAD CENTER FOR AN IN-HOME LEAD EDUCATION VISIT AND SOME ENVIRONMENTAL INTERVENTION (I.E. TEMPORARY LEAD HAZARD CONTROL MEASURES, WINDOW REPLACEMENT)
SIGNIFICANT	ONE VENOUS BLL ≥ 20 µg/dL OR TWO BLLs (CAPILLARY OR VENOUS) ≥ 15 µg/dL DONE 90 – 365 DAYS APART**	FAMILY IS REFERRED TO A LEAD CENTER FOR AN IN-HOME LEAD EDUCATION VISIT AND IS OFFERED AN ENVIRONMENTAL INSPECTION
<p>* In addition to the actions described, a letter is sent to families living in Providence ONLY informing them that they can contact the City of Providence for a free environmental inspection of their home.</p> <p>** Two blood lead levels (capillary or venous) ≥ 15 µg/dL may also be referred to as “persistent lead poisoning.”</p>		

In 1991, the Centers for Disease Control and Prevention (CDC) defined an elevated blood lead level (also referred to as “level of concern”) as a blood test result ≥ 10µg/dL, and suggested that children with elevated blood lead levels be monitored and re-tested. Recent research suggests that blood lead levels lower than 10µg/dL can have harmful health effects.^{3, 4} In response to questions about whether to change the “level of concern,” CDC has prepared the following statement, which can be found on their website at www.cdc.gov/lead/qanda.htm:

“Recent studies suggest that adverse health effects exist in children at blood lead levels less than 10µg/dL. In the past the CDC has lowered the level considered elevated in response to similar reports. However, at this time the reasons not to lower the level of concern are as follows:

- » *No effective clinical interventions are known to lower the blood lead levels for children with levels less than 10µg/dL or to reduce the risk for adverse developmental effects.*
- » *Children cannot be accurately classified as having blood lead levels above or below a value less than 10µg/dL because of the inaccuracy inherent in laboratory testing.*
- » *Finally, no evidence exists of a threshold below which adverse effects are not experienced. Thus, any decision to establish a new level of concern would be arbitrary and provide uncertain benefits.*

These studies support making primary prevention of childhood lead poisoning a high priority for health, housing, and environmental agencies at the state, local, and federal levels.”

3 Canfield RL, Henderson CR, Cory-Slechta DA, Cox C, Jusko TA, Lanphear BP. Intellectual Impairment in Children with Blood Lead Concentrations below 10µg per Deciliter. *New England Journal of Medicine* 2003; 348:1517-26.

4 Selevan SG, Rice DC, Hogan KA, Euling SY, Pfahles-Hutchens A, Bethel J. Blood Lead Concentration and Delayed Puberty in Girls. *New England Journal of Medicine* 2003; 348:1527-36.

RACE AND ETHNICITY



Collecting race and ethnicity data is difficult. The Rhode Island Childhood Lead Poisoning Prevention Program (RI CLPPP) faces challenges with respect to getting providers to ask patients for race and ethnicity information. In the Lead Elimination Surveillance System (LESS) database, approximately 65% of ethnicity data and 40% of race data are missing each year. As a result of the incomplete data, lead poisoning rates by race and ethnicity are not reported here. In an effort to learn more about why these data are not being collected regularly, RI CLPPP conducted a small pilot survey in 2004 among laboratory professionals and patients at 22 laboratories.

The general findings of the survey indicated that laboratory professionals are uncomfortable asking patients about their race and ethnicity, and only 17% (8/47) of those surveyed were interested in receiving training about how to collect race and ethnicity information. The majority of patients surveyed (85/90) reported feeling comfortable identifying their race and ethnicity when asked by laboratory or medical professionals. The majority of patients also indicated that they prefer to complete the race and ethnicity questions on the form themselves, or to be asked directly to identify their race and ethnicity. One way to gather the information from patients without making laboratory professionals uncomfortable would be to have patients complete the race and ethnicity questions themselves.

During 2005, RI CLPPP plans to:

- » Share the findings of the survey with the Office of Minority Health and laboratories throughout the state;
- » Contact laboratories via a mailing or site visit to encourage them to have patients complete the race and ethnicity questions on the form;
- » Develop educational resources to explain the importance of collecting race and ethnicity data and distribute these materials to laboratory staff;
- » Develop educational resources to explain to the public how race and ethnicity data are used and why laboratories will be collecting this information.

The impact of these efforts will be evaluated based on the percent of new blood lead tests that contain race and ethnicity information over the coming years.

SCREENING FOR LEAD POISONING

In 2004, 34,101 children from birth to six years of age were screened for lead poisoning. Over the last three years, the number of children screened annually has been approximately 34,000; however, there has been a slight decrease of 2% between 2002 and 2004.

CITY/TOWN	2002	2003	2004
BARRINGTON	730	667	679
BRISTOL	701	665	611
BURRILLVILLE	430	428	405
CENTRAL FALLS	1,188	1,133	1,135
CHARLESTOWN	269	232	202
COVENTRY	890	889	870
CRANSTON	2,040	1,939	1,958
CUMBERLAND	938	875	897
EAST GREENWICH	344	363	377
EAST PROVIDENCE	1,546	1,519	1,517
EXETER	156	141	140
FOSTER	110	109	98
GLOCESTER	181	161	166
HOPKINTON	280	242	252
JAMESTOWN	125	130	120
JOHNSTON	704	689	627
LINCOLN	543	499	492
LITTLE COMPTON	113	137	117
MIDDLETOWN	458	572	593
NARRAGANSETT	370	275	248
NEW SHOREHAM	11	25	31
NEWPORT	917	935	847
NORTH KINGSTOWN	902	856	810
NORTH PROVIDENCE	690	635	623
NORTH SMITHFIELD	232	226	240
PAWTUCKET	2,838	2,912	2,915
PORTSMOUTH	543	576	588
PROVIDENCE	8,438	8,797	8,753
RICHMOND	251	182	183
SCITUATE	305	278	258
SMITHFIELD	407	381	338
SOUTH KINGSTOWN	852	768	773
TIVERTON	546	502	541
WARREN	388	389	354
WARWICK	2,049	1,867	1,905
WEST GREENWICH	153	146	138
WEST WARWICK	925	843	855
WESTERLY	688	660	606
WOONSOCKET	1,855	1,743	1,751
UNKNOWN RI CITY/TOWN	0	38	88
STATEWIDE	34,907	34,230	34,101

NOTE: Children are counted only once in each year, regardless of the number of times they are tested.

Highlighted cities are those defined as core cities.

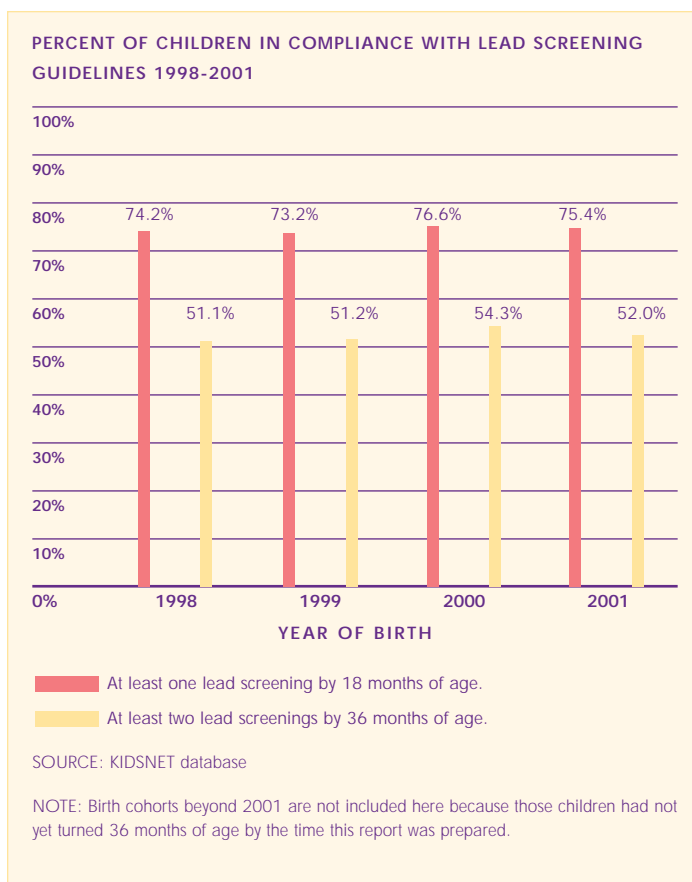
COMPLIANCE WITH LEAD SCREENING GUIDELINES

As discussed previously, all healthcare providers in Rhode Island are required by law to screen their patients between nine months and six years of age for lead poisoning annually. Compliance with these guidelines is assessed by measuring the proportion of children born in a given year with at least one blood lead test by 18 months of age, and at least two blood lead tests by 36 months of age.

Screening children early in life is needed to promptly identify children with elevated blood lead levels and offer interventions. Approximately 75% of Rhode Island children born in 1998 through 2001 were screened for lead poisoning at least once by 18 months of age; however, only about 52% of these children were screened at least twice by 36 months of age.

This indicates that although the majority of children are being screened by 18 months of age, efforts must continue to focus on screening children as they approach 36 months of age.

The high rate of screening in Rhode Island may be attributed to several outreach efforts, such as sending reminders to parents to have their children tested at the 12-month well child visit. Since April 2004, many pediatric practices have access to the web-enabled KIDSNET system, Rhode Island's integrated child health information system. KIDSNET allows health care providers to generate reports of unscreened patients in their practice at any time, and use these reports to monitor lead screening among their patients.



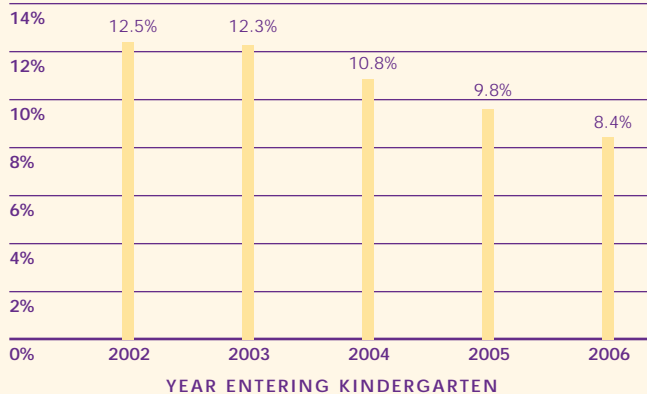
SCREENING AMONG CHILDREN ENTERING KINDERGARTEN

Rhode Island law states that all children must be screened for lead poisoning prior to entering kindergarten. The data below are based on blood lead levels of three-year-old children who would be entering kindergarten by age five.

The number of children entering kindergarten who have ever had an elevated blood lead level is decreasing over time. Of the children who will be entering kindergarten in 2006,

only 8.4% have ever had a blood lead test $\geq 10\mu\text{g}/\text{dL}$, compared to 12.5% of children entering kindergarten in 2002. This is a decrease of almost one-third over a five-year period, indicating that fewer children are being exposed to lead.

PERCENT OF CHILDREN ENTERING KINDERGARTEN
2002-2006 WITH BLL $\geq 10\mu\text{g}/\text{dL}$



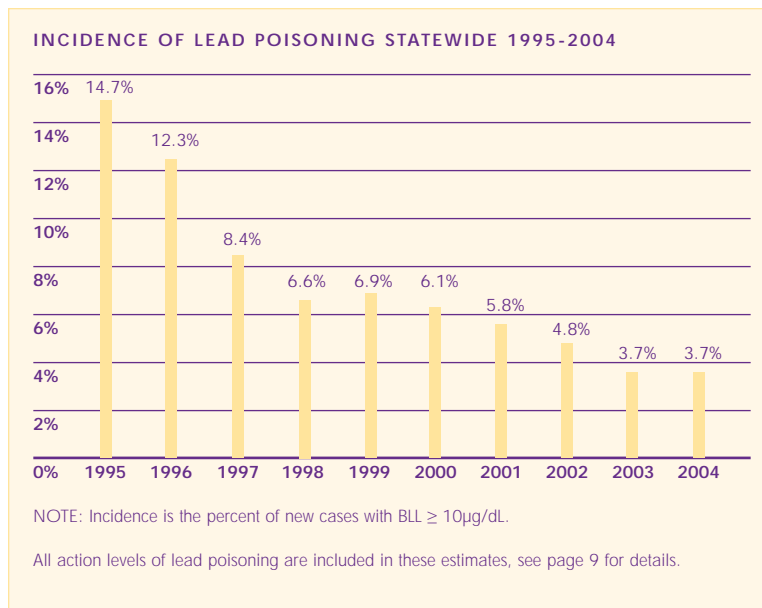
NOTE: Rates are based on the highest blood lead test per child (capillary or venous) through December 31 two years prior to the year the child enters kindergarten (i.e. rates for children entering kindergarten in 2005 are based on the highest blood lead level a child had through December 31, 2003).



INCIDENCE OF LEAD POISONING

The Rhode Island Childhood Lead Poisoning Prevention Program (RI CLPPP) tracks and reports the number of new cases of lead poisoning ($\text{BLL} \geq 10\mu\text{g/dL}$) among children under six years of age who have never been previously poisoned. This statistic is known as the incidence of lead poisoning.

The proportion of new cases of lead poisoning among children has declined by 75%, from 14.7% in 1995 to 3.7% in 2004. In spite of the significant decline in incidence over time, 1,167 children were poisoned for the first time in 2004, and the incidence remained unchanged between 2003 and 2004. This suggests that we must continue our prevention efforts in order to protect children from lead poisoning so that the declining trend of lead poisoning continues.

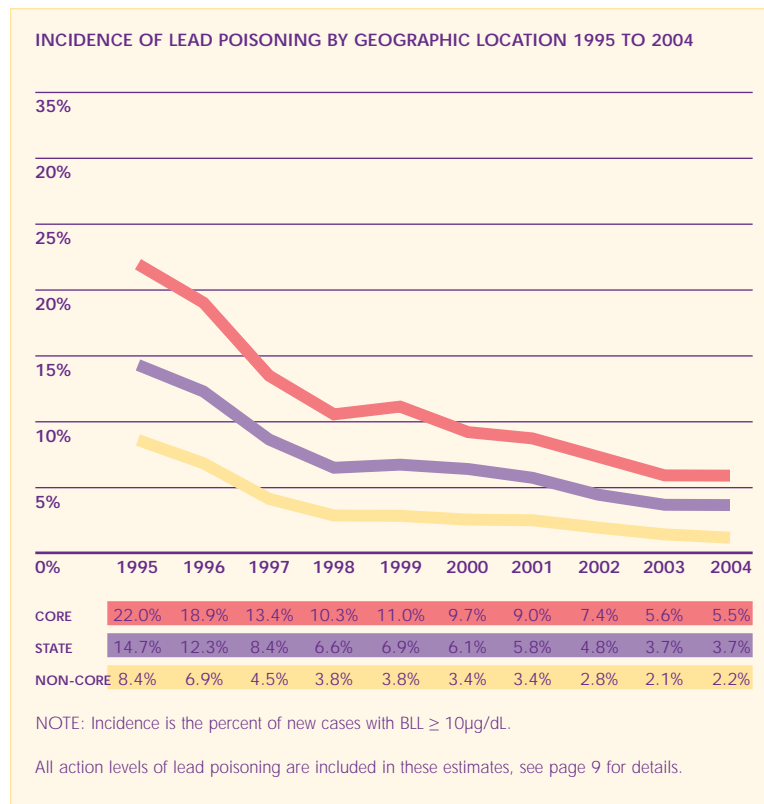


INCIDENCE OF LEAD POISONING BY GEOGRAPHIC LOCATION

Cities where the child poverty level is greater than 15% (according to the 2000 Census) are designated as core cities. Rhode Island currently has six core cities: Central Falls, Newport, Pawtucket, Providence, West Warwick, and Woonsocket.

The incidence of lead poisoning has declined by approximately 75% over the last 10 years. Between 2003 and 2004, the incidence of lead poisoning has continued to decrease in the core cities, remained stable in the state as a whole, and increased minimally (0.1%) in the non-core cities.

New cases of lead poisoning continue to be concentrated in Rhode Island's core cities. As recently as 1999, the core cities had an incidence almost three times greater than that of the remaining cities and towns (11% vs. 3.8%). In 2004, the incidence of lead poisoning in the core cities was more than twice that of the remaining 33 cities and towns (5.5% vs. 2.2%).



INCIDENCE OF LEAD POISONING BY CITY AND TOWN IN 2004

CITY / TOWN	NUMBER OF CHILDREN WITH BLL \geq 10 μ g/dL FOR THE FIRST TIME	TOTAL # CHILDREN SCREENED WITH NO PREVIOUS ELEVATED BLOOD LEAD LEVEL	INCIDENCE
BARRINGTON	6	655	0.9%
BRISTOL	12	587	2.0%
BURRILLVILLE	12	374	3.2%
CENTRAL FALLS	77	1,005	7.7%
CHARLESTOWN	6	193	3.1%
COVENTRY	7	840	0.8%
CRANSTON	54	1,858	2.9%
CUMBERLAND	9	879	1.0%
EAST GREENWICH	7	360	1.9%
EAST PROVIDENCE	41	1,430	2.9%
EXETER	1	139	0.7%
FOSTER	2	94	2.1%
GLOCESTER	0	160	0.0%
HOPKINTON	8	238	3.4%
JAMESTOWN	2	114	1.8%
JOHNSTON	13	601	2.2%
LINCOLN	6	477	1.3%
LITTLE COMPTON	2	114	1.8%
MIDDLETOWN	11	567	1.9%
NARRAGANSETT	5	238	2.1%
NEW SHOREHAM	2	30	6.7%
NEWPORT	35	761	4.6%
NORTH KINGSTOWN	17	784	2.2%
NORTH PROVIDENCE	13	594	2.2%
NORTH SMITHFIELD	2	233	0.9%
PAWTUCKET	109	2,678	4.1%
PORTSMOUTH	13	570	2.3%
PROVIDENCE	487	7,739	6.3%
RICHMOND	8	177	4.5%
SCITUATE	3	253	1.2%
SMITHFIELD	2	332	0.6%
SOUTH KINGSTOWN	28	745	3.8%
TIVERTON	8	514	1.6%
WARREN	10	327	3.1%
WARWICK	41	1,847	2.2%
WEST GREENWICH	2	135	1.5%
WEST WARWICK	21	817	2.6%
WESTERLY	16	570	2.8%
WOONSOCKET	66	1,598	4.1%
UNKNOWN RI CITY/TOWN	3	91	3.3%
STATEWIDE	1,167	31,718	3.7%

NOTE: A child may be represented more than once in the column "Total # of Children Screened with no Previous Elevated Blood Lead Level" if he lived and was tested in more than one city or town during the same year. City-specific incidence for previous years can be found on the website at www.health.ri.gov/lead/databook.

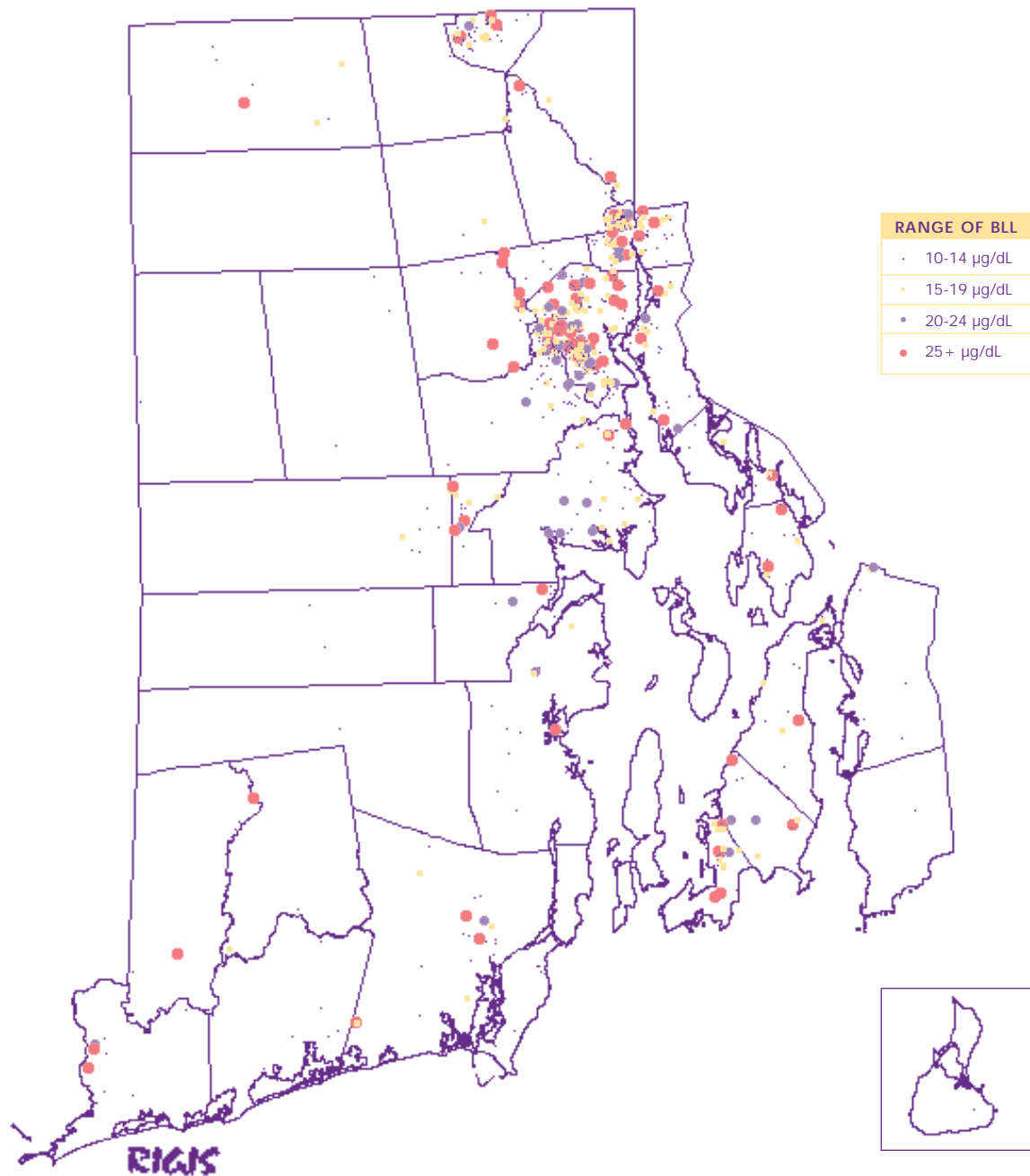
Highlighted cities are those defined as core cities.

All action levels of lead poisoning are included in these estimates, see page 9 for details.

MAP OF LEAD POISONING INCIDENCE IN 2004

The 1,167 children found to have a blood lead level $\geq 10\mu\text{g/dL}$ for the first time in 2004 are plotted on the map below according to their city or town of residence.

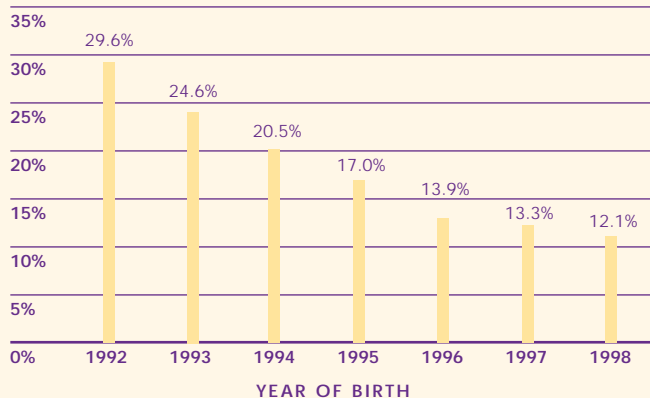
2004 INCIDENCE OF LEAD POISONING (BLL $\geq 10\mu\text{g/dL}$)



INCIDENCE OF LEAD POISONING BY BIRTH COHORT

The incidence of lead poisoning by birth cohort is defined as the proportion of children born in a given year (birth cohort) who became lead poisoned before the age of six.

INCIDENCE OF LEAD POISONING AMONG CHILDREN
BORN IN 1992-1998



NOTE: Incidence is the percent of new cases with BLL $\geq 10\mu\text{g/dL}$. Birth cohorts beyond 1998 are not included here because those children were not yet six years old when this report was prepared.

All action levels of lead poisoning are included in these estimates, see page 9 for details.

The risk of a child becoming lead poisoned in Rhode Island has decreased over time.

Approximately one in four children (29.6%) born in 1992 was lead poisoned before the age of six, compared to one in eight children (12.1%) born in 1998.

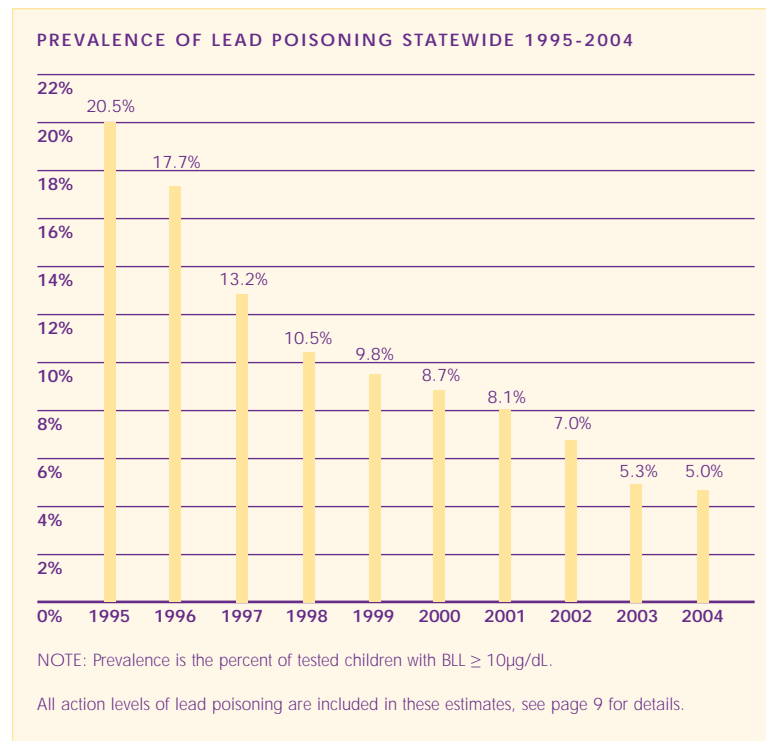


PREVALENCE OF LEAD POISONING

Reporting prevalence of lead poisoning allows one to look at the number of children under the age of six who have lead poisoning at a given point in time.

The data show a 76% decline in the prevalence of lead poisoning over the last ten years, from 20.5% in 1995 to 5% in 2004. However, 5% is more than double the national estimate of childhood lead poisoning of 2.2%,⁵ according to the 1999-2000 National Health and Nutrition Examination Survey (NHANES) conducted by the Centers for Disease Control and Prevention (CDC).

Although the prevalence of lead poisoning in Rhode Island has been steadily declining, a total of 1,685 children had lead poisoning in 2004. Of these 1,685 children poisoned, 1,167 were newly poisoned in 2004.

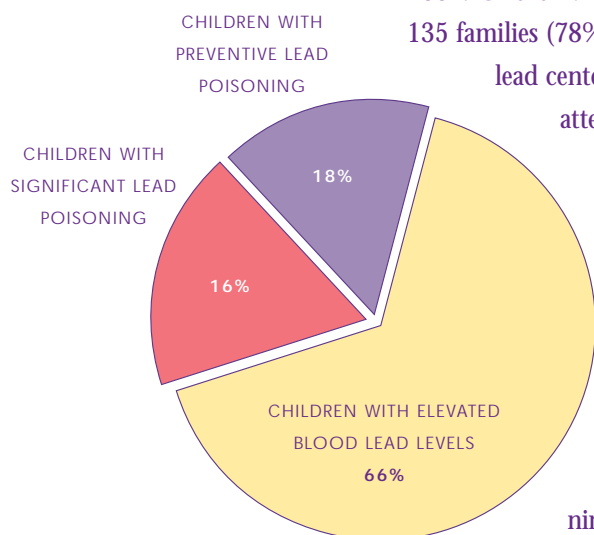


5 Meyer PA, Pivetz T, Dignam TA, Homa DM, Schoonover J, Brody D. Surveillance for Elevated Blood Lead Levels Among Children- United States, 1997-2001. In: *Surveillance Summaries*, September 12, 2003. MMWR 2003; 52(No. SS-10):1-21.

SERVICES OFFERED TO LEAD POISONED CHILDREN

Children with significant lead poisoning (venous $\geq 20\mu\text{g/dL}$ or persistent $\geq 15\mu\text{g/dL}$)

Significantly lead poisoned children are referred to lead centers and offered an in-home lead education visit and an environmental inspection of their home. One hundred seventy-two cases of significantly lead poisoned children were referred to one of four lead centers in 2004. Of the 172 significant lead poisoning cases referred to lead centers in 2004, a total of 135 families (78%) accepted services. The remaining 37 (22%) did not receive services from lead centers because either the family refused or could not be located after several attempts to contact them. In 2004, 85 cases were closed by lead centers after receiving full services, and were open an average of 7 months.



Children with preventive lead poisoning (15 – 19 $\mu\text{g/dL}$)

Families of children with first-time venous blood lead levels between 15 and 19 $\mu\text{g/dL}$ are offered in-home lead education by lead centers. Preventive cases are not offered environmental inspections. (Prior to July 1, 2004, lead center services were offered to children with a venous or capillary blood lead level between 15 and 19 $\mu\text{g/dL}$.) One hundred ninety-four preventive lead poisoning cases were referred to lead centers in 2004.

Slightly more than one third of these cases (74 children or 38% of referred families) did not receive case management services because the family refused services or the lead center was not able to locate the family. Some refusals in this group occurred between January and June 2004, after a follow-up venous test found the child's blood lead level to be $< 15\mu\text{g/dL}$.

Children with elevated blood lead levels (10 – 14 $\mu\text{g/dL}$)

In 2004, educational materials were sent to 729 families with children with first-time lead levels (venous or capillary) between 10 and 14 $\mu\text{g/dL}$. These families were encouraged to contact the Family Outreach Program for a free home-based lead education visit. The Family Outreach Program provided 61 home visits in 2004 and began collecting dust wipes as part of the home visit in late 2004.

At the request of the City of Providence Lead Hazard Reduction Program, the Rhode Island Childhood Lead Poisoning Prevention Program (RI CLPPP) sent letters to Providence families with children with elevated blood lead levels (10 – 14 $\mu\text{g/dL}$). The letter included educational materials and encouraged families to contact the City of Providence to request a

free comprehensive environmental inspection of their apartment or home. During 2004, 342 Providence families received a mailing from RI CLPPP and the City of Providence conducted 26 inspections for families with children with a blood lead level between 10 and 14 $\mu\text{g}/\text{dL}$.

The number of families with a child with an elevated blood lead level requesting and receiving an inspection from the City of Providence has decreased from 40 in 2003 to 26 in 2004. The free inspection offered by the City of Providence is a great resource for families to identify lead hazards in their apartment or home, and to learn how to minimize exposure among their children. Unfortunately, only a small number of families are taking advantage of this free service. The City of Providence encourages families with a child with an elevated blood lead level, who have received a letter, to call to schedule a free inspection.

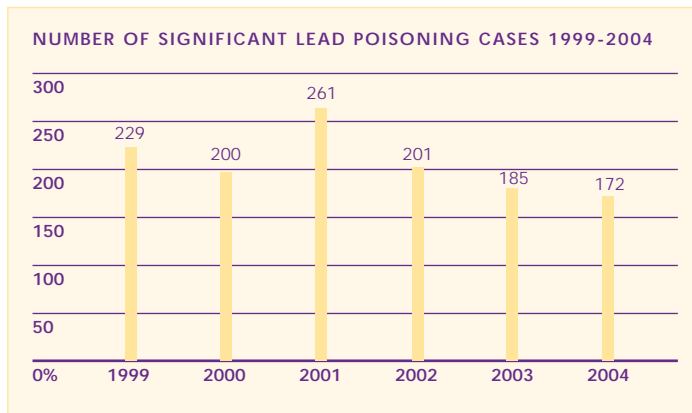


CASE MANAGEMENT FOR SIGNIFICANT LEAD POISONING

Significant lead poisoning among children under six years of age is defined as a venous blood lead level $\geq 20\mu\text{g/dL}$, or two blood lead tests $\geq 15\mu\text{g/dL}$, done between 90 and 365 days apart. Children with significant lead poisoning are referred to lead centers for case management services. Lead centers are non-profit agencies funded by Medicaid that offer comprehensive case management services to families of children with significantly elevated blood lead levels. Families can voluntarily accept or refuse case management services offered by lead centers. The percent of families accepting case management services has remained at 78% over the last two years.

The number of children with significant lead poisoning has been decreasing slightly over the last four years. In 2001, 261 children were referred to case management, compared to 172 children in 2004. This is a 34% decrease in the number of significantly lead poisoned children over the last four years.

In 2004, seven children were hospitalized for lead poisoning, compared to four in 2003. This indicates that although the overall number of significantly lead poisoned children is decreasing, a lead poisoning problem still exists in Rhode Island, and therefore continuous prevention efforts are needed.





ENVIRONMENTAL INSPECTIONS OFFERED

Comprehensive environmental inspections are offered to families of children who have an environmental intervention blood lead level (EIBLL).⁶ Families are offered an environmental inspection at no cost. The landlord's permission is neither required nor sought for the inspection to occur.

In 2004, 168 environmental inspections were offered and inspections were performed in 119 homes. All of these inspections identified lead hazards in the home.

In 2004, 14 families refused the inspection, compared to 27 in 2003 and 49 in 2002. Based on a Department of Health survey conducted between December 2001 and March 2002, it appears that families are more willing to allow environmental inspections if they receive and complete case management services.

In eight cases, the family moved before the inspection was offered and/or performed. In these cases, the family was offered an inspection at their new address and a letter was sent to the previous address informing the new occupants that if they have children less than six years of age residing at the address, they can receive a free inspection. No tenants at these previous addresses have requested an inspection.

ENVIRONMENTAL INSPECTIONS OFFERED 2000-2004*					
	2000	2001	2002	2003	2004
INSPECTIONS OFFERED	262	327	264	182	168
CHILD MOVED	11	30	11	21	8
NO RESPONSE TO LETTERS AND CALLS	13	20	15	16	13
INSPECTION REFUSED	30	53	49	27	14
PENDING INSPECTION	0	0	0	0	14
INSPECTIONS PERFORMED	208	224	189	118	119
* Report run 1/25/2005					

⁶ For environmental inspection purposes, EIBLL is synonymous with significant lead poisoning.

STATUS OF ENVIRONMENTAL INSPECTIONS

Lead hazards have been completely abated in 23 of the 119 properties where hazards were identified through environmental inspections in 2004.

Eighty-three (70%) of the 119 environmental cases opened in 2004 remain open and ongoing. The Department of Health actively engages, through consultation and enforcement, these property owners, as well as those owners cited in previous years, until lead hazard remediation is achieved.

In 2004, 13 cases were closed without complete remediation of lead hazards. In these cases, the parents of the child with an environmental intervention blood lead level were also the owners of the property.

STATUS OF ENVIRONMENTAL CASES 2000-2004*					
	2000	2001	2002	2003	2004
CASES CLOSED	183	202	158	94	36
LEAD HAZARD COMPLETELY ABATED	134	143	107	68	23
PARENT IS OWNER OF PROPERTY; CASE CLOSED AFTER 90 DAYS	25	48	46	23	13
ABATEMENT COMPLETE EXCLUDING SOIL REMEDIATION	19	1	0	0	0
NO LEAD HAZARDS FOUND	4	8	4	3	0
NO LONGER REGULATED	1	2	1	0	0
ONGOING CASES	25	22	31	24	83
VARIOUS STAGES OF ABATEMENT	19	17	22	12	81
ABATEMENT COMPLETE EXCLUDING SOIL REMEDIATION	2	4	3	2	0
EXTERIOR ABATED, INTERIOR PENDING	1	0	0	1	0
INTERIOR ABATED, EXTERIOR PENDING	2	1	4	5	0
ENROLLED OR ENROLLING IN A HUD PROGRAM, AWAITING ABATEMENT 1		0	2	4	2
TOTAL CASES	208	224	189	118	119
* Report run 1/25/2005					

PUBLIC LISTS

The Lead Poisoning Prevention Act, as amended in the Lead Hazard Mitigation Law of 2002, mandates the Rhode Island Department of Health to maintain certain public lists in order to alert the public about rental properties that pose a high risk for lead poisoning.

The three public lists mandated by the Law include:

Highest Risk Premises – The properties contained in this list have been declared unsafe for habitation by children under age six, because multiple poisonings have occurred and the property has not been made lead safe after being required to do so by the Department of Health (see “High Risk Properties” on page 27 for more detailed information).

Properties with Multiple Poisonings – The properties contained in this list have been the source of multiple lead poisonings of children and are not currently lead safe. Specifically, the list includes addresses of properties where four or more children had been living when they had their blood lead tested and at least two of these children were lead poisoned ($BLL \geq 10\mu\text{g/dL}$).



Ongoing Violations (2nd NOV) – The Ongoing Violations (2nd Notice of Violation) public database contains property owners (along with their current address) who have received a 1st and then a 2nd Notice of Violation from the Department of Health and have not yet corrected lead hazards on that property, as required.

In addition, the Department of Health publishes the “Closed Case List” which is a searchable list that contains information about environmental inspection cases closed by the Department of Health since January 1993. Please visit the website at www.health.ri.gov/lead to learn more about the types of closed cases.

All of these lists are available for viewing at the Department of Health’s website at www.health.ri.gov/lead.

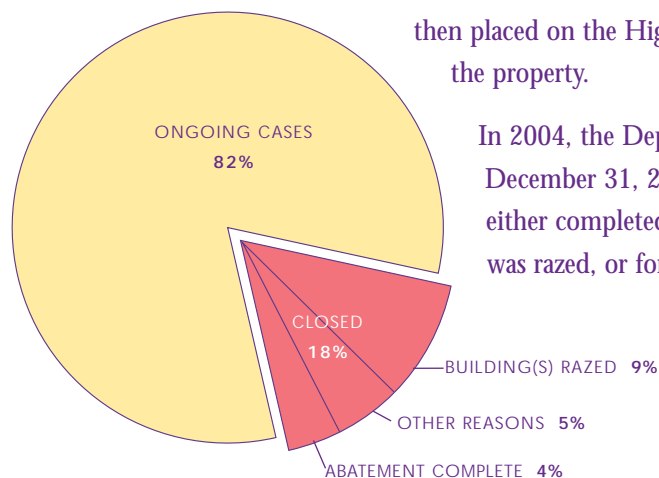
HIGH RISK PROPERTIES

The Rhode Island Department of Health works with the Department of the Attorney General and the Providence Minimum Housing Office to enforce Rhode Island Laws and Regulations covering properties where children have been identified as having environmental intervention blood lead levels (EIBLL).

To meet the changes in the Lead Poisoning Prevention Act, as amended by the Lead Hazard Mitigation Law of 2002, the Rhode Island Department of Health has created a new case definition called High Risk. A High Risk case is created when both of the following conditions have been met:

- (a) There have been three or more children under age six living at the premises with at least environmental intervention blood lead levels, and
- (b) Fifty percent of all children under age six who ever lived at the premises who have been tested for lead, have had at least environmental intervention blood lead levels.

Once a case has been created, the Department of Health sends the owner of the property a Notice of High Risk indicating that the premises present a high risk of lead poisoning. The property owner must then either (a) conduct a comprehensive lead inspection of the high-risk property within 30 days, and show that lead hazards have been corrected to meet the lead safe standard; or (b) present a plan to correct lead hazards to the Department of Health for approval and show that all lead hazards have been corrected to the lead safe standard within 90 days. If the property owner fails to comply with the requirements, the premises are declared unsafe for human habitation by children under age six. The property is then placed on the Highest Risk Premises public list and a lien is placed on the property.



In 2004, the Department officially opened 57 high-risk cases. By December 31, 2004 ten of these cases had been closed because they either completed lead hazard reduction (abatement), the building(s) was razed, or for other reasons.

APPENDIX

RI Childhood Lead Poisoning Prevention Program Advisory Committee Members

Rita Boie	Comprehensive Child Care Services Network of RI
Frank Bragantin	Rhode Island Apartment Association
Dawn Britto	Early Head Start
Robert Burke	Memorial Hospital
Nolan Byrne	Department of Human Services
Kristine Campagna	VNA of Care New England
Kathy Chagnon	Coordinated Health Partners, Inc., BlueCHip
Patrice Cooper	United Healthcare
Gilson DaSilva	Blue Cross Blue Shield of RI
Gail Davis	Hasbro Primary Care
Doris DeLosSantos	Rhode Island Housing
Christopher Dillon	City of Providence Code Enforcement
Dorothy Ericksson	Neighborhood Health Plan of RI
Roxana Flores	Coordinated Health Partners, Inc., BlueCHip
Helena Friedmann	Childhood Lead Action Project
Erick Garcia	American Lung Association of RI
Chris Gorham	Rhode Island Housing
Lynda Greene	Providence Community Centers
Theresa Hancock	RI Kidscount
Dave Johnston	City of Providence, Department of Planning and Development
Ann Kinneavy	Rhode Island Hospital Lead Clinic
Simon Kue	Housing Resources Commission
Nancy LeClerc	Westbay Community Action Program
John Logan	Brown University
Christina Londono	Family Service of RI
Leslie Martineau	Lady of Fatima Hospital
Jan Moore	Blackstone Valley CAP
Christine Paccia	Coordinated Health Partners
Roseanna Pacific	Blue Cross Blue Shield of RI
Virginia Paine	Woonsocket Head Start
Ita Principe	Rhode Island Housing
Robyn Riley	Child Inc.
Carol Schraeder	Warwick Lead Hazard Reduction Program
Mary Schreitmuller	Child Inc.
Sam Shamoon	City of Providence
Monica Staaf	RI Association of Realtors
Donna Tattari	Providence Head Start
Elaine Theriault	United Health Care of New England
June Tourangeau	St. Joseph Hospital Lead Clinic
David Ubiera	St. Joseph Hospital-Laboratory
Patrick Vivier	Rhode Island Hospital

GLOSSARY OF TERMS

BLL: Blood lead level.

EBL: Elevated blood lead. A single blood lead level between 10-14 µg/dL.

EIBLL: Environmental intervention blood lead level. Synonymous with Significant Lead Poisoning.

Incidence: The proportion of new cases of a disease that develops during a specified time period among the population at risk for developing the disease. The population at risk for lead poisoning is defined as Rhode Island children under the age of six who have been screened for lead in a given year, and who have never had an elevated blood lead level.

Lead Hazard Mitigation Law: Legislation introduced by Senator Thomas Izzo, which passed and became law in June 2002. The law modified the Lead Poisoning Prevention Act and established standards for the maintenance of pre-1978 rental property in Rhode Island.

NOV: Notice of violation. A notice sent to a property owner after an environmental lead inspection or lead assessment has been performed and environmental lead hazards have been identified. The notice informs the property owner that significant environmental lead hazards exist on his property and requires the owner to abate all identified hazards in accordance with Rhode Island Department of Health regulations.

Persistent Lead Poisoning: A case of a child under age six with two blood lead tests (capillary or venous) done between 90 and 365 days apart that are ≥ 15 µg/dL.

Prevalence: Proportion of people in a population who have a given disease at a specific point in time.

Preventive Lead Poisoning: A case of a child under age six with a single blood lead level between 15 and 19 µg/dL for the first time.

RI CLPPP: The Rhode Island Childhood Lead Poisoning Prevention Program.

Screening: Mandatory test that involves collecting a blood sample from a child under the age of six, either through a fingerstick or a venipuncture. The sample is then analyzed to determine the amount of lead in the child's blood.

Significant Lead Poisoning: A venous blood lead level ≥ 20 µg/dL in a child under six years of age, or two blood lead tests (capillary or venous) from a child under six years of age, done between 90 and 365 days apart, with a blood lead level ≥ 15 µg/dL. Synonymous with EIBLL.

µg/dL: Micrograms per deciliter of whole blood; the measurement used to estimate the amount of lead in a sample of blood. This measure is sometimes represented as mcg/dL.



Healthy Homes
Healthy Children

RHODE ISLAND CHILDHOOD LEAD POISONING PREVENTION PROGRAM

For more information, contact:

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Rhode Island Department of Health
Childhood Lead Poisoning Prevention Program
Three Capitol Hill, Providence, RI 02908

Additional lead poisoning data can be found at www.health.ri.gov/lead

MAKE HEALTH PART OF YOUR FAMILY

RHODE ISLAND DEPARTMENT OF HEALTH